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August 25, 2004

VIA ELECTRONIC FILING

Marlene H. Dortch
Secretary
Office of the Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: *Ex Parte* Presentation in WT Docket No. 01-309
Section 68.4(a) of the Commission's Rules Governing
Hearing Aid Compatible Telephones

Dear Ms. Dortch:

On August 25, 2004, representatives from the Alliance for Telecommunications Industry Solutions ("ATIS") Incubator Solutions Program 4 dealing with Hearing Aid Compatibility issues ("AISP.4-HAC" or "HAC Incubator"), met with representatives from the Federal Communications Commission's ("FCC") Office of Engineering & Technology ("OET"). The purpose of the meeting was to provide a status report on the various projects this group has underway.

In attendance, representing the OET, were: Julius Knapp, Deputy Chief, Richard Fabina, Equipment Authorization Branch Chief, Martin Perrine, Electronic Engineer, Laboratory Division and Pat Forster, Senior Engineer, Spectrum Policy Branch. The individuals representing the HAC Incubator were: Steve Coston, Technical Manager, Regulatory Project Office, Sony Ericsson Mobile Communications; Mary Jones, Consultant, T-Mobile USA; Scott Kelley, Senior Staff Engineer, Disability Access, Product Safety & Compliance, Motorola Personal Communications Sector; Al Wieczore, Motorola; Jim Turner, Technical Coordinator, ATIS and Toni Haddix, Staff Attorney, ATIS.

During the meeting, there was extensive discussion around the HAC Test Spec ("HACTS") developed by the HAC Incubator, and the differences between the HACTS and ANSI C63.19. During this conversation, FCC representatives stressed the need for the two documents to converge in the near future. In response to a question from the HAC Incubator, the FCC representatives clarified the purpose of the HAC note code as administrative, so HAC compliant phones could easily be tracked. Also, during the meeting, HAC Incubator representatives presented a proposed application for HAC, which included a summary reporting sheet, an E-field technical details reporting sheet and an H-Field technical reporting sheet. The FCC representatives were impressed with this work, and asked that the dipole test measurements be captured in the summary sheet as well. Finally, the HAC Incubator representatives outlined the schedule for Phase 2 testing and invited the FCC to participate in Phase 2 testing. The discussion at the meeting was consistent with the presentation materials distributed during the meeting (a copy of which is attached with this letter).

If there are any questions regarding this matter, please do not hesitate to contact the undersigned.

Sincerely,

Toni Haddix
Staff Attorney
The Alliance for Telecommunications
Industry Solutions
1200 G Street NW
Suite 500
Washington, DC 20005
Phone: (202) 434-8830

Attachment

cc: Julius Knapp, Deputy Chief, OET
Richard Fabina, Equipment Authorization Branch Chief, OET
Martin Perrine, Electronics Engineer, Laboratory Division, OET
Pat Forster, Senior Engineer, Spectrum Policy Branch, OET
Catherine Seidel, Deputy Chief, WTB
Steve Coston, Technical Manager, Regulatory Project Office, Sony Ericsson Mobile Communications
Mary Jones, Consultant, T-Mobile USA
Scott Kelley, Senior Staff Engineer, Disability Access, Product Safety & Compliance, Motorola Personal Communications Sector
Al Weiczore, Motorola
Jim Turner, Technical Coordinator, ATIS
Megan Campbell, General Counsel, ATIS

AISP.4-HAC

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Ex Parte

August 25, 2004

Alliance for Telecommunications Industry Solutions

AISP.4-HAC

Agenda

- Introduction – Mary Jones
- Work Group 4 Progress – Scott Kelley
- HAC Application – Steve Coston
- Phase 2 Round Robin – Jim Turner

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Work Group 4 Findings

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Overview

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- Phase 1 test progress
- HACTS development activity
- Recommendations to C63 sc8
- Work Ahead

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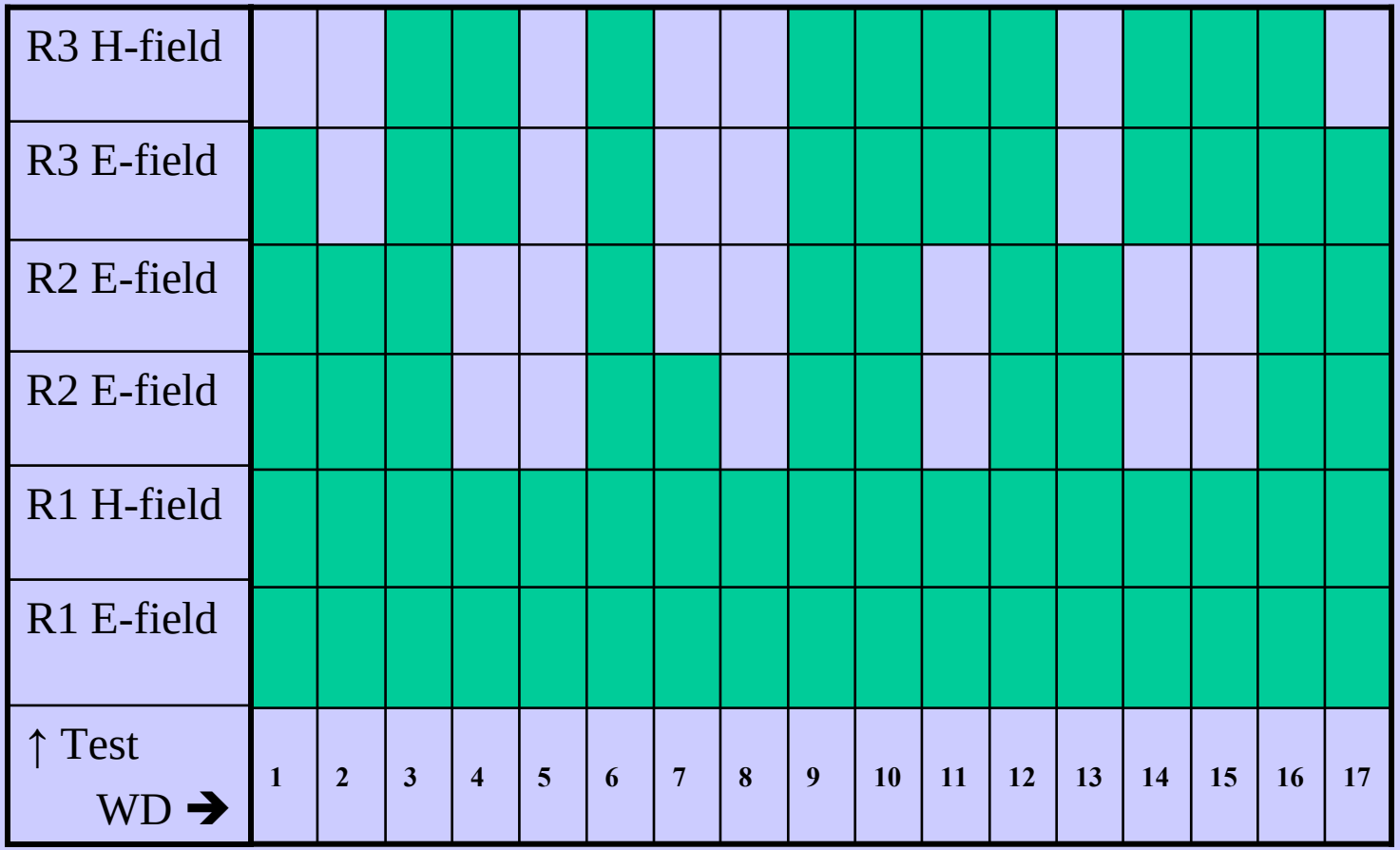
WG-4 Round Robin Progress



Green cells denote completed measurements (over 75% complete)

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HAC Test Spec (HACTS)

- Review of Purpose, as stated 9-Sept-03:

  "Working Group 4 (WG-4) is the Test Plan working group. The incubator is building on the work that ANSI C63.19 has accomplished in this area. The Hearing Aid Compatibility Technical Specification (HACTS) uses ANSI C63.19 rd2.5 standard as its starting point. WG-4 will make needed changes to HACTS, and when the document is completed, refer the changes back to C63 for appropriate action "

- Since that time, rd2.5 was balloted and passed by the C63.19 work group, and rd2.8 was made the central reference document for the above WG-4 purpose.
- Thus WG-4 scope and purpose have remained the same and the differences between HACTS and C63.19 rd2.8 were made within that purpose.

HAC Test Spec (HACTS)

AISP.4-HAC

- Needed changes from ANSI C63.19 rd2.8 have been included in the HACTS as part of the ongoing Incubator fast-track strategy.
- Most of these changes have been / will be delivered to the C63.19 work group via IEEE procedure at the Sept. 2004 meeting
- A few notes are included that are specific to this round-robin testing only (“HAC Notes”)
- Common reporting format developed

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HAC Test Spec (HACTS)

- HACTS development
  - Over 24 meetings in 3 months
  - Average meeting 3 to 4½ hours in length
  - Inputs both technical and detailed, validated through testing and theoretical simulations
  - As many as 12 organizations represented at every meeting
  - Over 30 technical staff dedicating hundreds of staff hours in research, testing, and consensus building

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HAC Test Spec (HACTS)

- HACTS 5.0 includes ~110 changes to ANSI C63.19 rd 2.8

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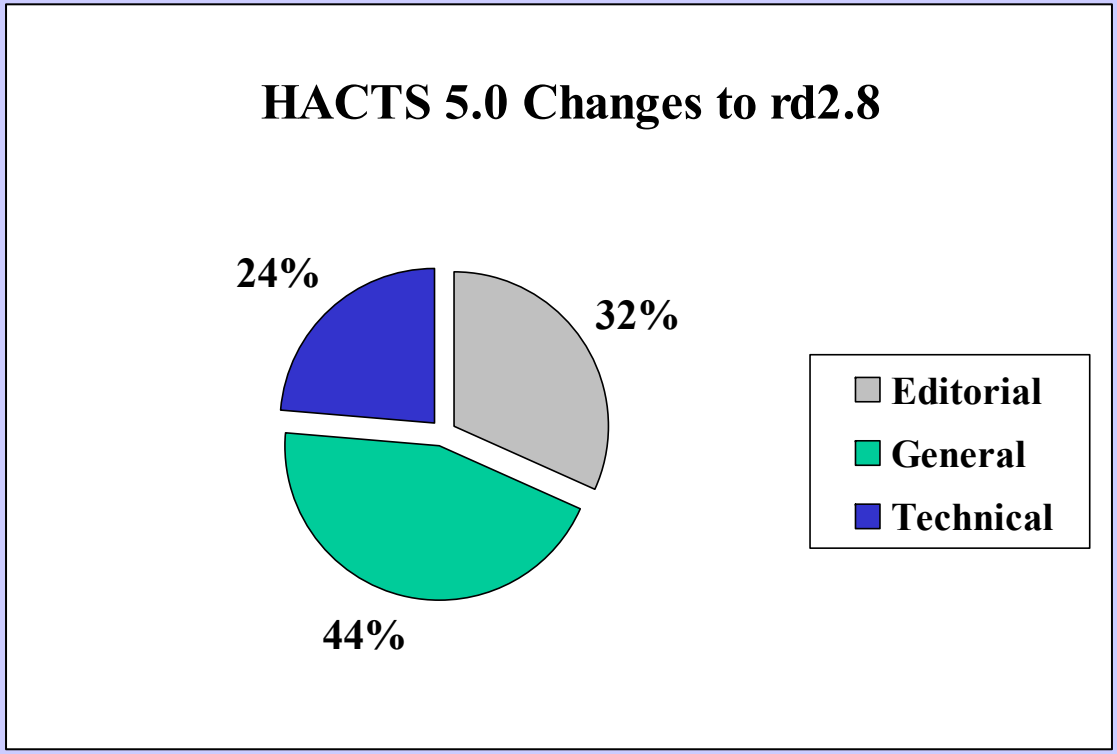

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Critical HACTS Changes

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Section	Change	Comment
4.1.2 Near-Field Measurement System	Rd2.5 had no scan increment defined. Rd2.8 stated scan increment must be less than 2.5 mm HACTS states 5mm or less.	Probe mfrs say scanning at less than 5mm is beyond probe's capability. WG-4 data verify RF scans to date vary no more than 1 V/m from 2mm to 5mm.
4.2 Test Setup and Validation	HACTS adds intro paragraph calling for a theoretical simulation of the dipole.	HACTS dipole measurements are compared to theoretical calculated values.
4.2.2.1 Calibration Procedures using Dipole	HACTS adds this section with expected values to further define procedure for dipole measurement.	Scan area, input power, results reporting are detailed. Additional HACTS Annexes are referenced.
4.2.2.2 Probe Modulation Factor	HACTS adds this section with expected values to define the additional factor that accounts for probe response to the different air interfaces.	Probe Modulation Factor is a needed factor to account for probe measurement system averaging.
4.2.3 WD Setup and Use	HACTS centers the 5x5 the scan area over the acoustic output of the earpiece.	Rd2.8 scan area based on phone design from 1997, whereas phone earpieces are much smaller today.
4.3.1.2.2 Automated Scanning Method	Rd2.8 mandated that E&H fields must use same exclusion area when evaluating M-level. WG-4 disagrees with this change from rd2.5. HACTS has WD display illumination turned off for repeatability.	HACTS performs analyses with separate and same exclusion areas for the round robin. WG-4 will likely contest same exclusion areas.

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Critical HACTS Changes

Section	Change	Comment
6.3 Test Procedure for Audio Band Magnetic Field	Rd2.8 does not address setting of the WD display backlight. HACTS allows it to be turned off if it can be off during a call.	Backlight off is required for measurement reliability of the round robin.
6.3.1 Test Flow for Audio Band Magnetic Field Test	HACTS changes procedure clarification steps and corrected Figure 13 flowchart.	HACTS establishes the procedure to be used for all three orientations and locations.
6.3.4.1.1 Auxiliary Induction Sources	HACTS adds "The location may be obtained from the WD manufacturer or found by scanning with the probe coil."	Test location is required to make repeatable T-Coil measurements.
6.3.4.2 Desired Plus Undesired Audio Band Magnetic Signal Measurement	HACTS adds "These measurements are made *over the frequency range of 300 to 3000 Hz*…" to align with section 7.3.2 and deleted references to Annex A.2 and Annex Figure A.3.	Specific frequency range must be defined for measurement consistency. Needed references to Annexes are in Section 6.3.4.4.

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Critical HACTS Changes

Reference Section	Change	Comment
6.3.4.4 Probe Coil Position and Orientation	HACTS adds two additional measurement orientations and locations (radial-1 & radial-2). 1mm scan increments are recommended for the case where the tester is scanning to find test reference positions.	All three measurement orientations are required to provide consistency and repeatability (Axial, Radial-1, Radial-2). Annex Figure A-3 is referenced here to show the three different orientation.
6.3.5 Calculation of Signal Quality	HACTS clarified that the undesired measurement is made from the *axial* orientation only and *recorded for the frequency range given in section 7.3.2.*	It is necessary to include this in order to make the measurement. HACTS Annex D.9.2 is referenced to clarify reporting.
6.4.1 Test Procedure for Broadband Test	HACTS adds six necessary inputs to the ten procedural steps.	Most significant input is to step 3, defining the acoustic output reference point.
Annex C.3.1 RF Field Probe Modulation Response	HACTS uses the WD device as the reference signal and verifies that the probe diode is operating in the same region used for the measurement. Thus HACTS has a different set of steps to support changes described in section 4.2.2.1 regarding probe modulation.	These new steps support the HACTS changes in Section 4.2.2.1.

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WG-4 Outlook

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- **Work Ahead:**
  - Complete Phase 1 R2 & R3 testing
  - Analyze Phase 1 data set
  - Contribute HACTS recommended changes to ANSI C63.19 for October meeting
  - Begin Phase II Round Robin in October

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Lab Testing, TCB, Application

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Overview

- HAC Note Code on the Grant
- FCC testing HAC
- Use of TCB's
- Recommendations to 'lift' TCB restrictions
- Proposed Applications for HAC
- Conclusions

HAC Note Code on Grant

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- Assigned a HAC code for Grant Acceptance
- Effective date of HAC note code
- ATIS AISP.4 Incubator (life-line) needs to be ‘closely coupled’ for communications to Mfgrs, Labs, Carriers
- Rules only require manufacturers to certify compliance with test requirements and indicate appropriate rating for the phone (47 CFR 20.19).
- Rules provide that “[t]he manufacturer of the equipment shall be responsible for maintaining the test results.” (47 CFR 2.1033)
- Grant HAC Note Code *indicates* the need for manufacturers to submit application to FCC for acceptance

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FCC Position on HAC

- Industry uncertain on FCC exact position
- Assigned a Grant Acceptance Note Code
- Disapproved the use of TCB's for HAC
- Want manufacturers to submit application to FCC for acceptance
- Sensitive to manufacturers' schedules and Carrier rollouts
- Always interested in 'streamlining processes'

Use of HAC-trained TCB's

- Key qualified Certification Bodies
- Instrumental in processing filings for manufacturers
- Eliminate 'bottlenecks' for manufacturers
- Valuable for processing new applications
- Continue expanding capabilities to meet schedules / deadlines
- Expedite products to consumers

Key Points to ‘lift’ TCB restrictions

- AISP Labs will be identified to the FCC/TCB
- Create early ‘Workshop’ to train TCB’s
- TCB’s can ‘punt’ non-AISP lab applications to FCC
- HAC Applications will provide key information to FCC and TCB’s
- Eliminate complex application process
- Manufacturers’ ability to maintain current process review time
- FCC’s ability to conduct post-Grant sampling to ensure compliance (similar to SAR)

Proposed Application for HAC

Key Elements:

- Test Model Summary cover
- Key E field and H field peak scans
- Identified exclusion areas, mobile orientation, measurements taken to consider

Application Test Summary for HAC

AISP.4-HAC

ATIS AISP.4 WG-4 Round Robin Wireless Device Test Data Collection			
LAB INFORMATION	Wireless Device Manufacturer Name	**Sony Ericsson Mobile Communications (USA) Inc.**	
	Contact Name	Steven G. Coston	
	Contact Phone	919-472-7527	
	Contact Email	Steve.coston@sonyericsson.com	
	Contact Address	7001 Development Drive	
	Contact City	Research Triangle Park	
	Contact State	NC	
	Contact Zip Code	27709	
RF TEST INFORMATION	Wireless Device FCC ID Number	**FCC ID ABC-12345678**	
	Test Date	6-Apr-04	6-Apr-04
	RF Air Interface	GSM	GSM
	AWF	-5	-5
	Test Method (In Call vs. Test Mode)	IN CALL	IN CALL
	Radio Transmit Frequency (MHz)	**850**	**1880**
	Scan increment (mm)	5	5
	Measurement Uncertainty (dB)	1.4	1.4
RF RESULTS AND M-RATING	Highest Measured E-Field converted to Peak (dBV/m)	45.70	45.70
	E-Field Probe Modulation Factor (dB)	9.03	9.03
	Total E-Field Emissions with Probe Modulation Factor (dBV/m)	54.73	54.73
	E-Field M-Rating Criteria from ANSI C63.19		
	E-Field M Rating	**M0**	**M0**
	Highest Measured H-Field converted to Peak (dBA/m)	-0.80	-0.80
	H-Field Probe Modulation Factor (dB)	9.03	9.03
	Total H-Field Emissions with Probe Modulation Factor (dbA/m)	8.23	8.23
	H-Field M-Rating Criteria from ANSI C63.19		
	H-Field M Rating	**M0**	**M0**
	Total M Rating	**M0**	
T-COIL RESULTS AND T-RATING	**T-Rating**	**NR**	
	Signal Quality (dB)	31.42	
	Magnetic Signal Strength Axial (dB A/m)	-3.90	
	Magnetic Signal Strength Radial 1 (dB A/m)	-12.54	
	Magnetic Signal Strength Radial 2 (dB A/m)	-12.54	
	Frequency Response curve passes (Yes/No)	No	

Category	Peak E-Field Emissions		
	AWF = 0	AWF = -5	Units
M1	46 to 51	43.5 to 48.5	dB(V/m)
M2	41 to 46	38.5 to 43.5	dB(V/m)
M3	36 to 41	33.5 to 38.5	dB(V/m)
M4	<36	<33.5	dB(V/m)

Category	Peak H-Field Emissions		
	AWF = 0	AWF = -5	Units
M1	-4.4 to 0.6	6.9 to -1.9	dB(A/m)
M2	-9.4 to -4.4	-11.9 to -6.9	dB(A/m)
M3	-14.4 to -9.4	-16.9 to -11.9	dB(A/m)
M4	<14.4	<-16.9	dB(A/m)

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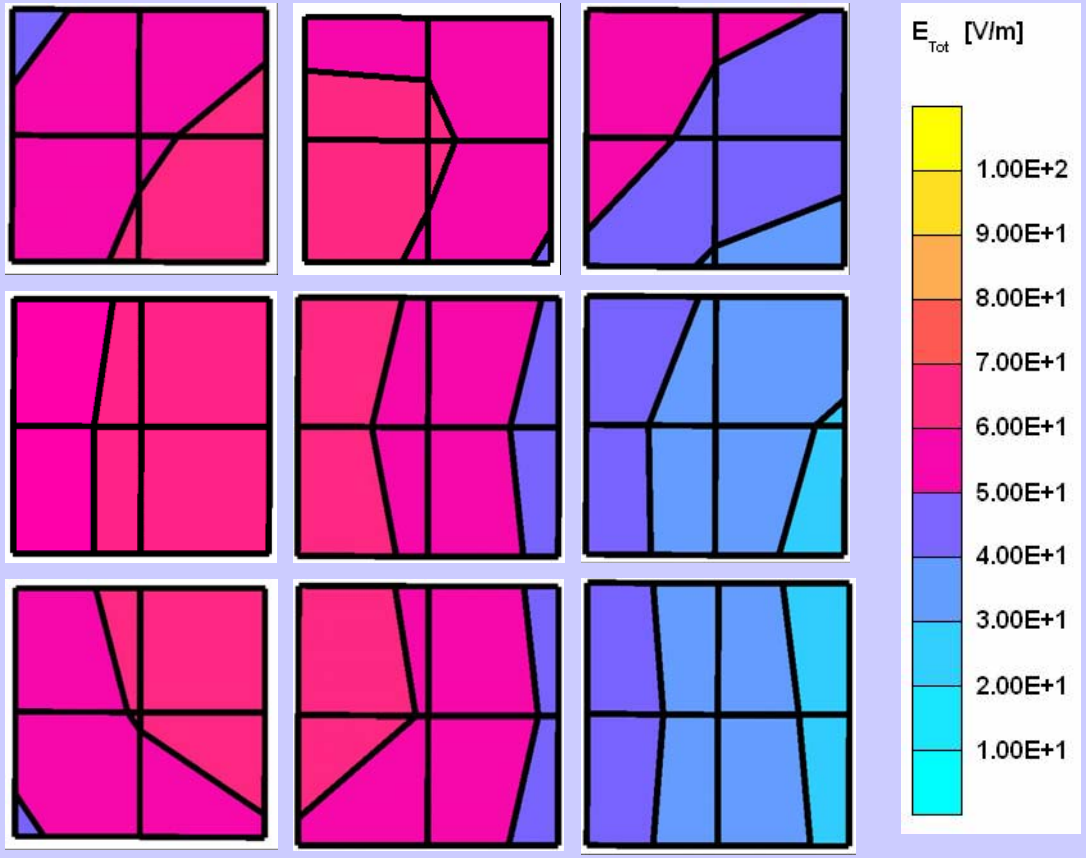
FCCID ABC-12345678

E-Field Scan 835 MHz (HAC Sub-grids)

Measured Data



Calculated

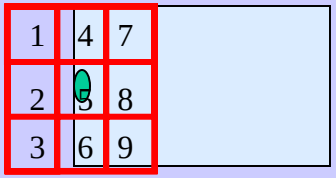
Peak E-filed / Sub-grid
dB V/m

Grid 1 **45.7**	Grid 4 **45.7**	Grid 7 **44.4**
Grid 2 **45.7**	Grid 5 **45.7**	Grid 8 **43.2**
Grid 3 **45.7**	Grid 6 **45.7**	Grid 9 **43.2**

Excluded Sub-grids
Max Remaining grid

GSM Limits with 5 dB AWF Factor		
	E-Field Emissions dB(V/m)	**H-Field Emissions dB(A/m)**
M1	43.5 - 48.5 dB(V/m)	-6.9 - -1.9 dB(A/m)
M2	38.5- 43.5 dB(V/m)	-11.9 - -6.9 dB(A/m)
M3	**33.5 - 38.5 dB(V/m)**	**-16.9 - -11.9 dB(A/m)**
M4	**<33.5 dB(V/m)**	**<-16.9 dB(A/m)**

Scan Area (w/ Grid Number)



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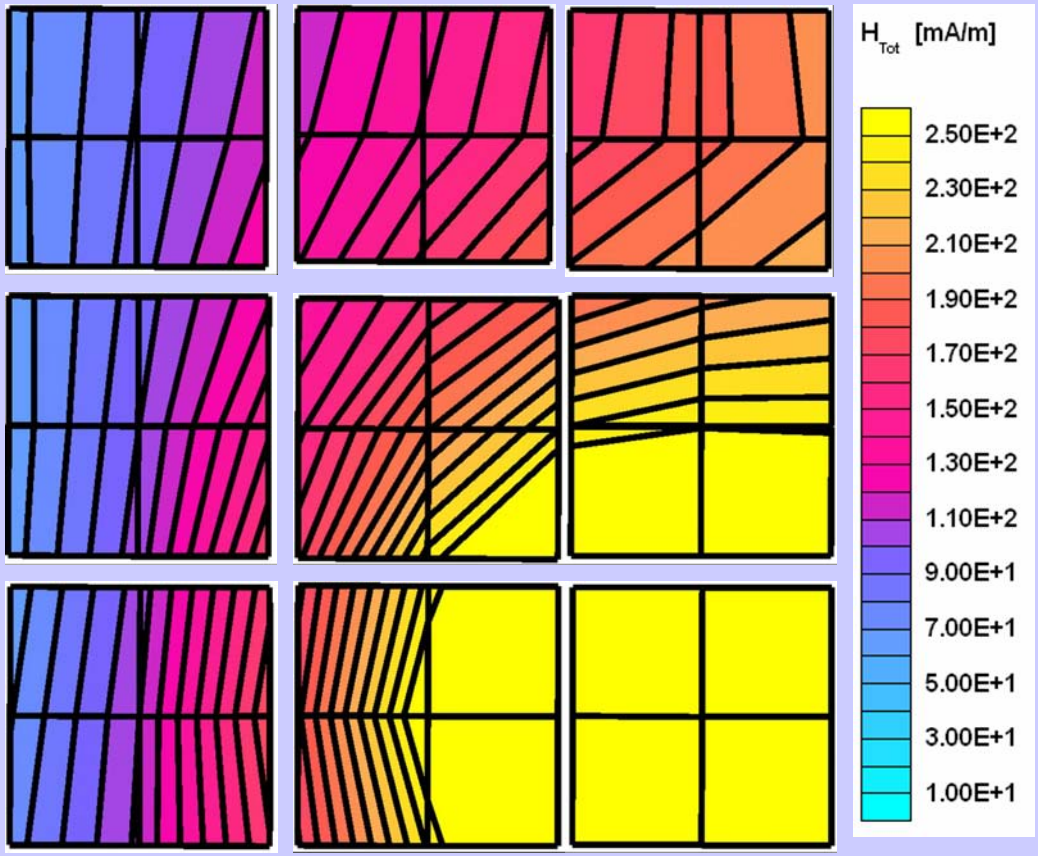
FCCID ABC-12345678

H-Field Scan 835 MHz (HAC Sub-grids)

Measured Data



	GSM Limits with 5 dB AWF Factor E-Field Emissions dB(V/m)	H-Field Emissions dB(A/m)
M1	43.5 - 48.5 dB(V/m)	-6.9 - -1.9 dB(A/m)
M2	38.5- 43.5 dB(V/m)	-11.9 - -6.9 dB(A/m)
M3	**33.5 - 38.5 dB(V/m)**	**-16.9 - -11.9 dB(A/m)**
M4	**<33.5 dB(V/m)**	**<-16.9 dB(A/m)**

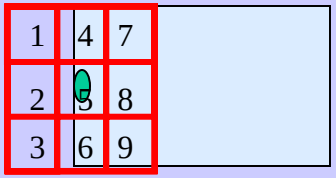
Calculated

Peak H-filed / Sub-grid dB A/m

Grid 1 **-8.2**	Grid 4 **-4.8**	Grid 7 **-3.8**
Grid 2 **-5.9**	Grid 5 **-0.8**	Grid 8 **-0.6**
Grid 3 **-5.4**	Grid 6 **0.3**	Grid 9` **1.0**

Excluded Sub-grids
Max Remaining grid

Scan Area (w/ Grid Number)



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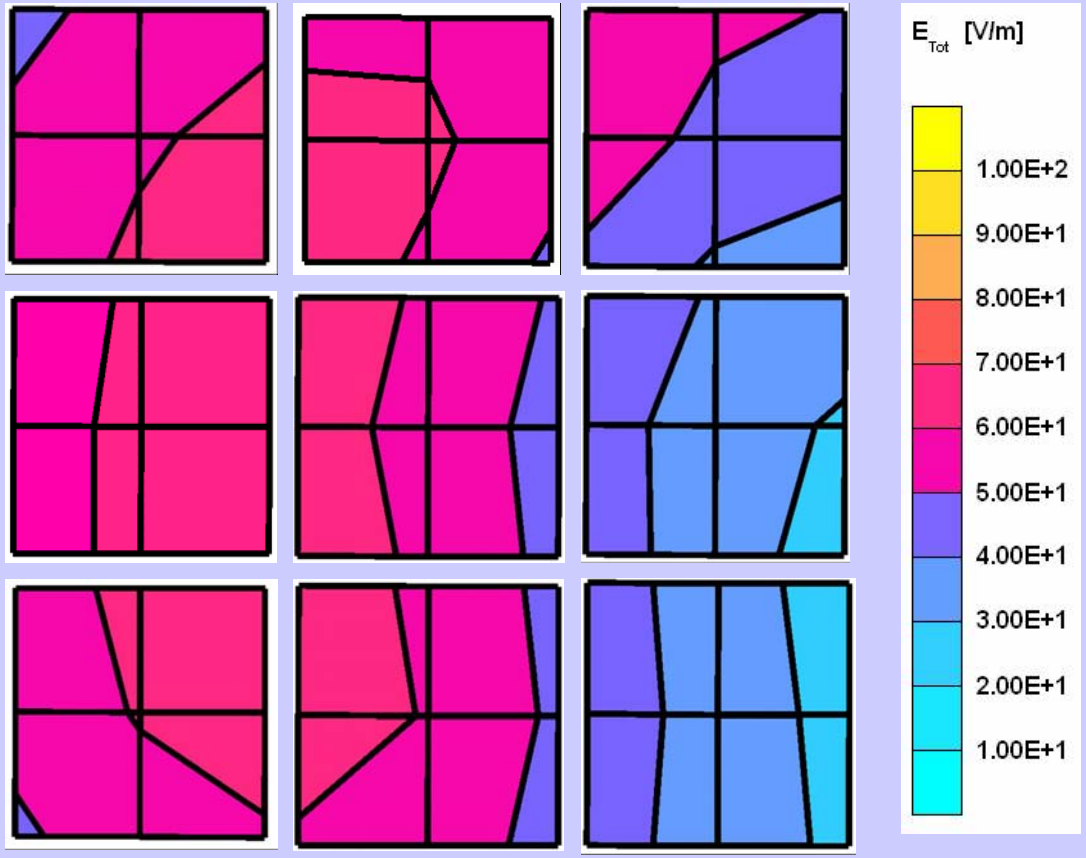
FCCID ABC-12345678

E-Field Scan 1880 MHz (HAC Sub-grids)

Measured Data



Calculated

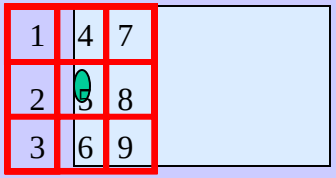
Peak E-filed / Sub-grid
dB V/m

Grid 1 **45.7**	Grid 4 **45.7**	Grid 7 **44.4**
Grid 2 **45.7**	Grid 5 **45.7**	Grid 8 **43.2**
Grid 3 **45.7**	Grid 6 **45.7**	Grid 9 **43.2**

Excluded Sub-grids
Max Remaining grid

GSM Limits with 5 dB AWF Factor		
	E-Field Emissions dB(V/m)	**H-Field Emissions dB(A/m)**
M1	43.5 - 48.5 dB(V/m)	-6.9 - -1.9 dB(A/m)
M2	38.5- 43.5 dB(V/m)	-11.9 - -6.9 dB(A/m)
M3	**33.5 - 38.5 dB(V/m)**	**-16.9 - -11.9 dB(A/m)**
M4	**<33.5 dB(V/m)**	**<-16.9 dB(A/m)**

Scan Area (w/ Grid Number)



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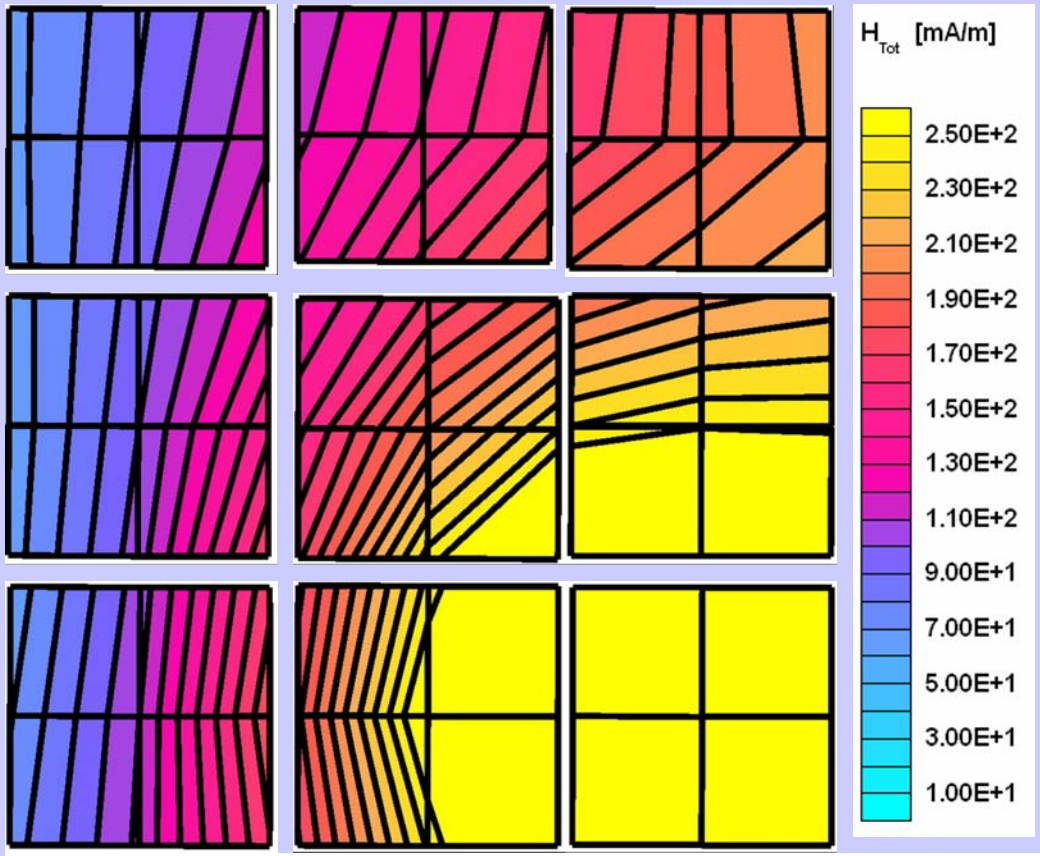
FCCID ABC-12345678

H-Field Scan 1880 MHz (HAC Sub-grids)

Measured Data



GSM Limits with 5 dB AWF Factor			
	E-Field Emissions dB(V/m)	H-Field Emissions dB(A/m)	
M1	43.5 - 48.5 dB(V/m)	-6.9 - -1.9 dB(A/m)	
M2	38.5- 43.5 dB(V/m)	-11.9 - -6.9 dB(A/m)	
M3	**33.5 - 38.5 dB(V/m)**	**-16.9 - -11.9 dB(A/m)**	
M4	**<33.5 dB(V/m)**	**<-16.9 dB(A/m)**	

Calculated

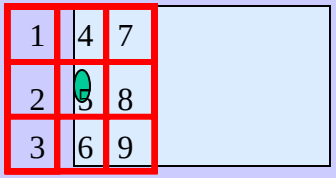
Peak H-filed / Sub-grid dB A/m

Grid 1 **-8.2**	Grid 4 **-4.8**	Grid 7 **-3.8**
Grid 2 **-5.9**	Grid 5 **-0.8**	Grid 8 **-0.6**
Grid 3 **-5.4**	Grid 6 **0.3**	Grid 9 **1.0**

Excluded Sub-grids

Max Remaining grid

Scan Area (w/ Grid Number)



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Conclusions

- Request FCC to support creating a TCB Workshop to allow ATIS Incubator / C63.19 work groups to train certification reviews for HAC
- TCB's need to continue providing certification reviews to prevent program delays, juggling schedules.
- FCC can attend an early Workshop for HAC
- HAC Application provides key information to TCB's and FCC

Conclusions

- Eliminate:
  - ‘bottlenecks’, complex processes, and duplication
- Additional Labs can be AISP.4 listed once they complete the Phase II Round Robin
- FCC able to conduct post-Grant sampling to ensure compliance

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Phase 2 Logistics

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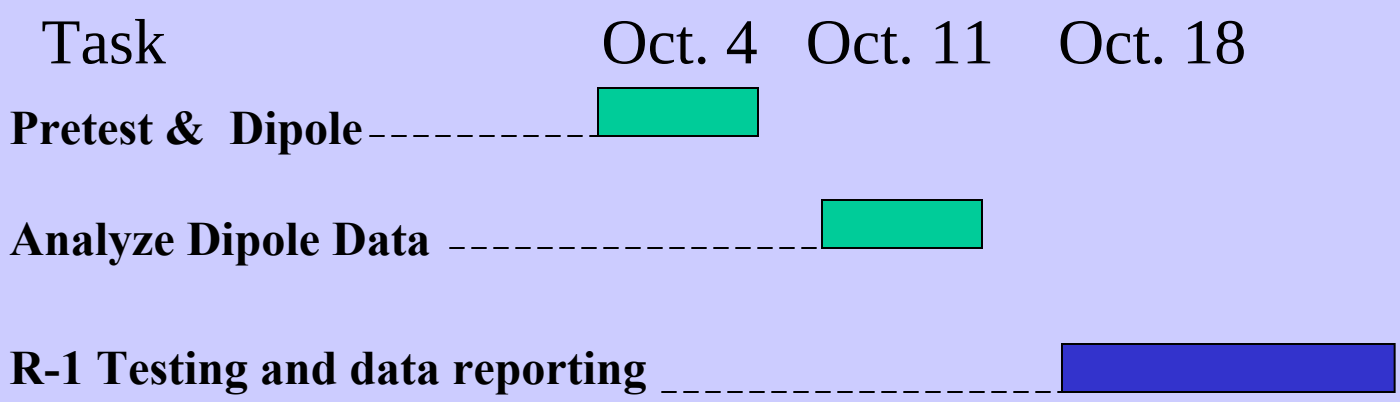
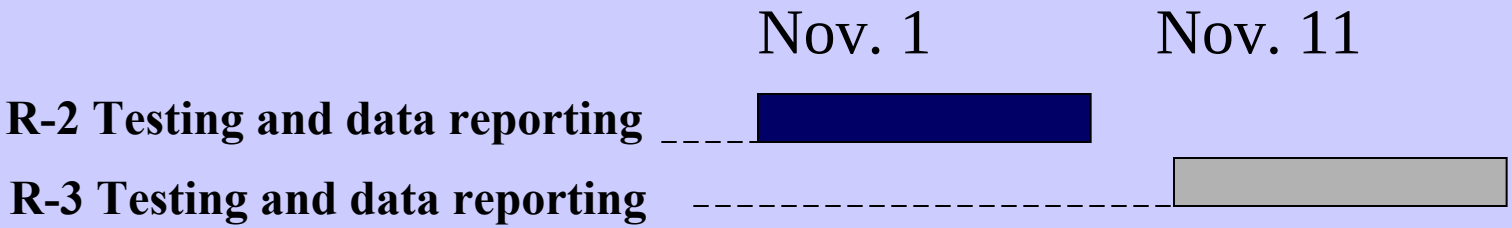
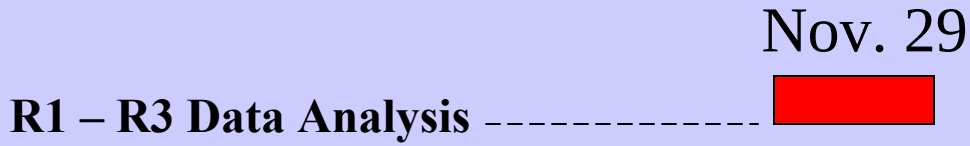
Overview

- Phase 2 Schedule
- Participants Agreements
- Logistics
  - Spreadsheet
  - Database
- Deliverables

Phase 2 Schedule







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Participant Agreements

- All data is reported in unanimity and not by lab name.
- Participants work to help each other in resolving issues
- Complete all data and required spreadsheets
- All will follow ATIS HAC Test Spec

Data Gathering

- Spreadsheets used to report data
- Data base entries made
- Reports generated to facilitate analysis of data

Sample Spreadsheet

AISP.4-HAC

Description	List of Equipment
Dosimetric Assessment System	
E-Field Probe	
H-field Probe	
Audio Signal Source	
RF Communications Test Set	
Chamber	
1/3 Octave Bandpass Filter	
A-weighted Bandpass Filter	
T-Coil Probe	
Probe Positioning System	
Base Station Simulator	
Dipole 1	
Dipole 2	
Dipole 3	
Dipole 4	
Pictures of lab set up	

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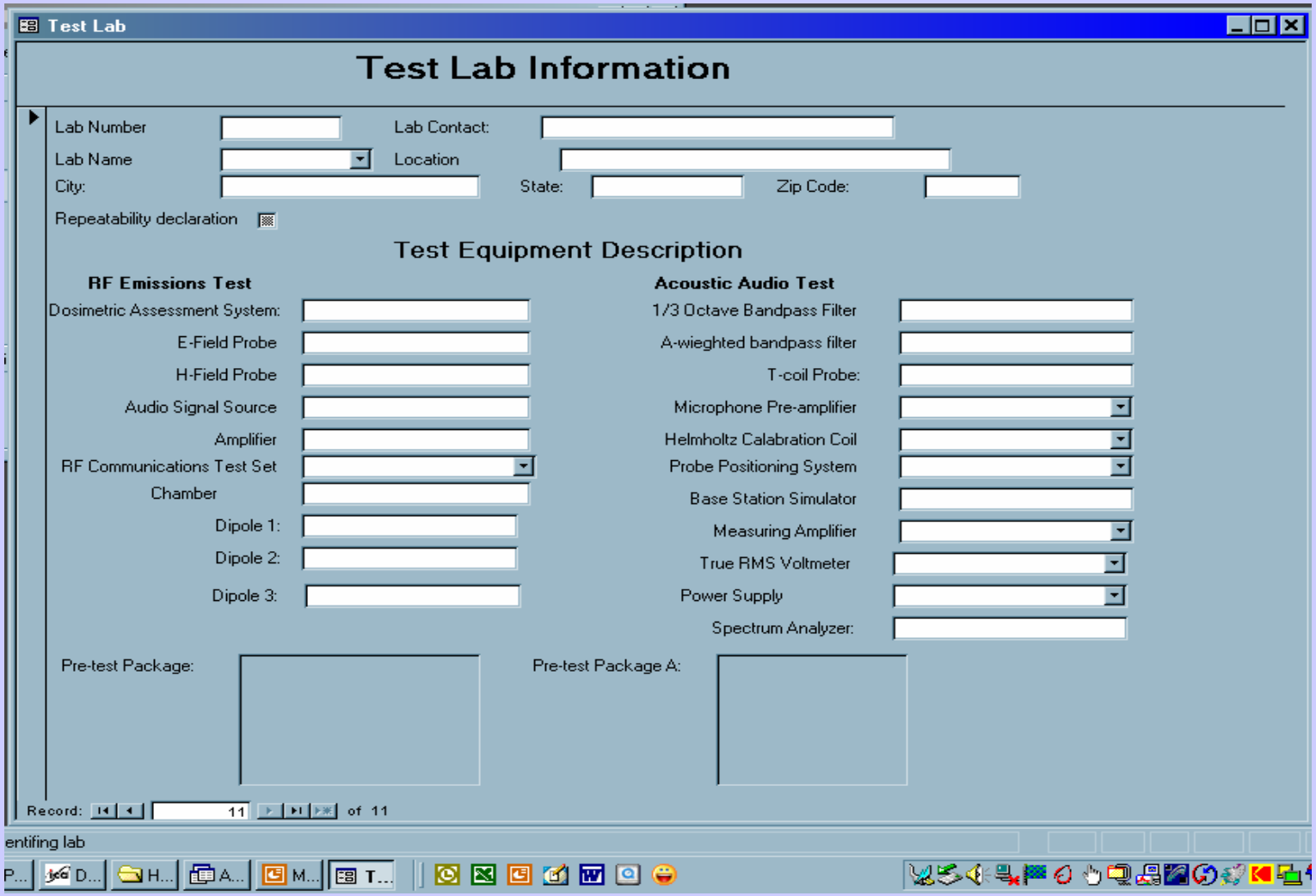
Test Lab Database Record

AISP.4-HAC



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Sample Report

AISP.4-HAC

Dipole Types

Lab #	Dipole 1	Dipole 2	Dipole 3	Dipole 4
1	D835 v2	D1800 v2	D1900 v2	
2	RIM 800	RIM 900	RIM 1900	RIM 850
3	D835 v2	D1900 v2		
4	D900 v2	D1800 v2		
5	D835v2	D1900 v2		
6	800 ETS	1900 Motorola		

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Phase 2 Deliverables

- Lessons learned and data from Phase 2 collected and will be incorporated into HACTS
- AISP.4 HAC Technical Spec finalized
- List participant labs for FCC & TCB reference

Recommendations

- FCC continue recognition of AISP.4 fast-track process and development of HACTS
- FCC amend Report & Order to include reference to ATIS AISP.4 HACTS procedure
- FCC support creating a TCB Workshop to allow ATIS Incubator / C63.19 work groups to train certification reviews for HAC
- FCC participate in Phase 2 Round Robin
- FCC accept TCB data

Contact Information

For more information, please contact:

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